



As long as there have been computers, decision makers have used them to solve complex problems. Linear programming systems have been used to solve logistics and planning problems since the 1950s. Statistical subroutine packages are some of the most ubiquitous examples of commercial software. Many credit VisiCalc™, an early PC-based spreadsheet program, with being one of the key applications that drove the rapid adoption of personal computers.

At present, we are seeing a rapid growth in the use of computers for solving decision problems arising in business. In part, this growth is due to continuing advances in computer hardware and software. Not only can we solve much larger problems than previously, but we can solve them much more quickly. In addition, the cost of the required computing platforms continues to decrease. The explosive growth of the Internet has enabled decision makers to access data from a broad variety of sources, to apply advanced analytics, and then to incorporate the results directly in their business operations.

The pressures of globalization and the resulting competitive environment have been key factors behind the increasing need for computers to solve complex business problems. Decision makers now want to incorporate advanced analytics in solving operational problems in near real time. Risk and uncertainty are better understood and managed, and companies are beginning to trade off risk versus expected return in a systematic fashion. The need to rapidly analyze massive quantities of noisy data has driven developments in data mining and business intelligence.

These analytic methods achieve their true potential when they are incorporated in the operational and planning activities of enterprises. In 2005, we launched the IBM Center for Business Optimization to accelerate our capabilities in this area. The Center combines the substantial strengths of IBM in analytic methods and techniques, the ability of our Research teams to solve problems of unprecedented scale and complexity, and the industry and business knowledge and skills of our consulting teams. The papers presented in this issue provide examples of how advanced analytics can be used to solve real business problems and showcase the business value that these solutions can deliver.

It is exciting to see such a broad spectrum of research and development activities in this rapidly growing area. I congratulate the authors on the significant successes reported here and look forward to our continuing to grow our abilities and to deliver outstanding client value.

A handwritten signature in black ink, appearing to read "Bill", with a stylized, cursive script.

William R. Pulleyblank  
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